fixture it is customary to put a sheet-metal washer between the lower face of the pinion and the top surface of the chuck ring / in order to keep chips and oil from running down into the dividing-head.

When milling the clutch gear J, the split collet is replaced by the expansion chuck *K.* The body of this chuck fits into the spindle and is locked in position by the chucking ring J. The work is held on this chuck by expanding it by means of the taper-headed screw *L,* which is turned by a square key.

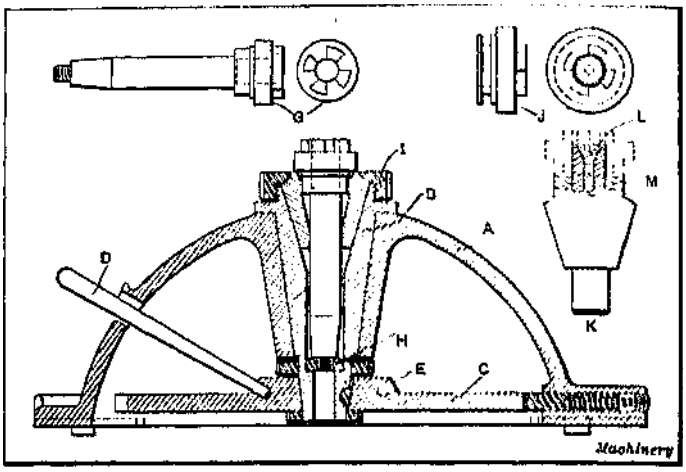

Fig. 14. Cross-sectional View of Fixture for Milling Clutches and Details of Work-holding Arbors

The hardened steel collar If is fitted on the chuck to provide a good bearing surface and resist wear, The clutch gear is shown in position on the chuck by dotted lines.

Eight cuts are required to complete the milling operations on one of these

clutch gears, and consequently it is necessary to use an eight-point index plate. After setting to bring the cutter to the required depth, the nulling machine saddle is moved in until one edge of the cutter registers with a point o.oio inch to the left of the center; four cuts are then made, completing one side of the dutch teeth. To mill the other side of the teeth, the milling machine saddle is moved out until the other side of the cutter registers with a point 0,010 inch